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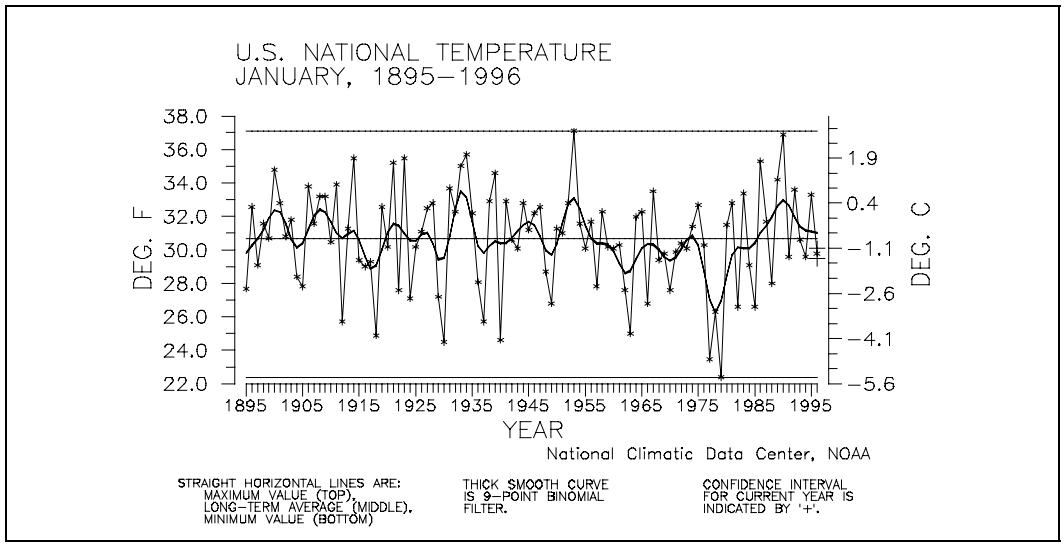
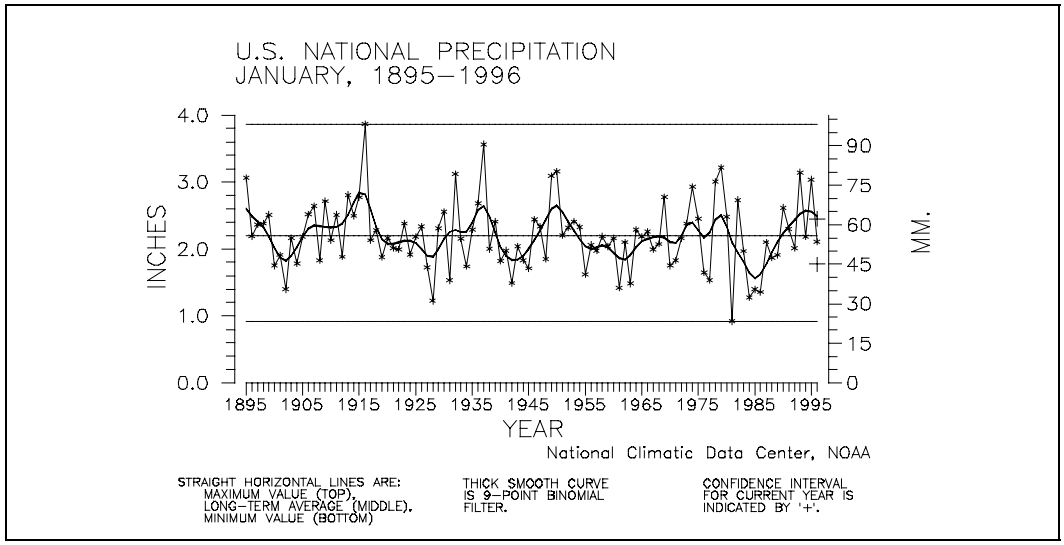
CLIMATE VARIATIONS BULLETIN





noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE / NATIONAL CLIMATIC DATA CENTER ASHEVILLE, N.C.

This CLIMATE VARIATIONS BULLETIN (CVB) is a preliminary report that puts current monthly climate anomalies into historical perspective using climate databases archived at the National Climatic Data Center (NCDC). It is issued on a monthly basis. Supplemental sections are included which address seasonal and annual perspectives, when appropriate.

Current data are based on preliminary reports from First and Second Order airport stations obtained from the National Weather Service (NWS) Climate Analysis Center, and preliminary tornado statistics obtained from the NWS National Severe Storms Forecast Center. THE CURRENT DATA SHOULD BE USED WITH CAUTION. These preliminary data are useful for estimating how current anomalies compare to the historical record, however the actual values and rankings for the current year will change as the final data arrive at NCDC and are processed.

The following NCDC datasets are used for the historical data: the climate division drought database (TD-9640), the hurricane datasets (TD-9636 and TD-9697), the tornado dataset (STORM DATA), and the monthly station dataset (LCD supplemental files). It should be noted that the climate division drought database consists of monthly data for 344 climate divisions in the contiguous United States. These divisional values are calculated from the 6000+ station Cooperative Observer network.

The narrative, tables, and graphs in the CVB are also available via automated facsimile. The previous month's summary can be obtained after the tenth of the month by dialing 704-271-4570 and selecting the appropriate menu codes. A touch-tone fax machine is required.

If you have access to the Internet, copies of the CVB are available via both the NCDC's World Wide Web (WWW) server and the NCDC's anonymous FTP server.

NCDC's WWW server
URL for the CVB: http://www.ncdc.noaa.gov/publications/cvb/cvb.html

NCDC's anonymous FTP server
Machine: ftp.ncdc.noaa.gov
Directory: /pub/data/cvb

If you are a climate researcher and would like to order copies of the historical datasets used to make graphs of the type in this report, call 704-271-4994 or fax a letter to 704-271-4876 or mail a letter to the address given below, ATTN: Research User Services.

All other questions or requests for data should be made by calling 704-271-4800 or sending a fax to 704-271-4876 or by writing to:

National Climatic Data Center, NOAA
Federal Building
151 Patton Avenue, Room 120
Asheville, NC 28801-5001

If you use any of the information from this CVB, please identify "National Climatic Data Center, NOAA" as the source.

UNITED STATES JANUARY CLIMATE IN HISTORICAL PERSPECTIVE

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Global Climate Lab, Global Analysis Branch
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Preliminary data for January 1996 indicate that temperature averaged across the contiguous United States was slightly below the long-term mean (see Figure 1). January 1996, with an averaged temperature of 29.8° (F), ranked as the 34th coolest January since national records began in 1895. The 1996 value is based on preliminary data, which has been shown to be within 0.31°F (0.17°C) of the final data over a 7-year period. This confidence interval is indicated in the figure by '+'. The darker smooth curve is a nine-point binomial filter that averages out the year-to-year fluctuations and shows the longer-term variations. Roughly three percent of the country averaged much cooler than normal while four percent of the country averaged much warmer than normal for January 1996.

With an areally-averaged national precipitation value of 2.11 inches, January 1996 was the 45th driest January on record. The preliminary value for precipitation is estimated to be accurate to within 0.34 inches (8.64 millimeters) and the confidence interval is plotted in Figure 2 as a '+'. About one-eighth of the country experienced much drier than normal conditions while nearly a tenth was much wetter than normal.

Historical precipitation is shown in a different way in Figure 3. The January precipitation for each climate division in the contiguous U.S. was first standardized using the gamma distribution over the 1931-90 period. These gamma-standardized values were then weighted by area and averaged to determine a national standardized precipitation value. These national weighted values were then normalized over their period of record. Negative values are drier and positive values are wetter than the mean. This index gives a more accurate indication of how precipitation across the country compares to the local normal (60-year average) climate. The preliminary national standardized precipitation ranked January 1996 as the 33rd driest such month on record. This standardized z-score is estimated to be accurate to within 0.256 index units and the confidence interval is plotted in Figure 3 as an 'X'.

In order to show more of a historical perspective, the precipitation and temperature rankings for the periods August 1995-January 1996 and February 1995-January 1996, the January 1996 temperature rankings and categorical precipitation standings for the nine climatically homogeneous regions, as well as the national rankings, are listed in Table 1.

The regional rankings for temperature for the month of January indicate that temperatures were cooler than normal for the eastern coastal and northern border states and warmer than normal for the West and Southwest regions. It was the 21st coolest January on record for the West-North Central region (Figure 4) and the 28th coolest January for the East-North Central region. At the other extreme, it was the 13th warmest January for the West region (Figure 6) and the 23rd warmest January for the Southwest region. The warmth noted during January for the western third of the country is also noted in the six-month and twelve-month periods. Both the Southwest and West regions had their fourth warmest such six-month period as well as their eighth warmest twelve-month period. The Northwest region averaged slightly cooler.

The East-North Central, Northeast, and West-North Central regions were within the wet-third of the historical distribution for precipitation during January 1996 while the South and Southwest regions were within the dry-third. The remainder of the country was within the middle-third of the distribution.

Figure 5A shows, in illustrative map form, the January 1996 temperature rankings for the 48 contiguous states. No state was within the top-ten cool or the top-ten warm categories of the distribution, however 22 states were within the cool third of the distribution and six others ranked within the warm-third of the historical distribution.

January 1996 state categorical ranks for precipitation are shown in Figure 5B. Eight states ranked within the dry-third of the historical distribution

while 22 states ranked within the wet third. ***(It should also be noted that these January state categorical precipitation ranks are preliminary and should be used with considerable caution due to the high variability of precipitation on a small space and time scale.)***

Long-term drought coverage in the United States during January increased slightly while the area of the country experiencing severe to extreme wettness also increased slightly. Nationally, long-term drought conditions (as defined by the Palmer Drought Index) for January 1996 increased to 3.1% of the country while the percent coverage of severe to extreme wet area fell to about a sixth of the country (Figure 7). Table 2 lists statistics for selected river basins for the 1995-1996 Hydrologic Year. The core wet areas included the northern Great Plains, the northern Rockies, portions of the interior Northwest, and portions of the Southeast and mid-Atlantic. The Palmer dry areas included the Southwest and central-coastal California.

Table 3 shows extremes, 1961-90 normals, and the January 1996 values for both precipitation and temperature for the nine regions and the contiguous U.S.

Precipitation across the Primary Hard Red Winter Wheat Belt for the four-month growing season to-date averaged much below normal through January 1996 (Figure 8).

According to preliminary data from the National Weather Service's National Severe Storms Forecast Center, there were 24 tornadoes across the contiguous United States in January 1996. The 1953-1994 average tornado count for January is 14. Extremes for January include a minimum of 0 tornadoes in 1986 and a maximum of 52 in 1975. It should be noted that the preliminary tornado count is generally higher than the final count and that observations have generally improved with time.

TABLE 1. PRECIPITATION AND TEMPERATURE RANKS, BASED ON THE PERIOD 1895-1996. 1 = DRIEST/COLDEST, 102 = WARMEST FOR JANUARY 1996 TEMPERATURES 101 = WETTEST/WARMEST FOR AUG 1995-JAN 1996, 101 = WETTEST/WARMEST FOR FEB 1995-JAN 1996. PRESENT MONTH PRECIPITATION EXPRESSED CATEGORICALLY: WET = WET 1/3 OF THE HISTORICAL DISTRIBUTION MID = WITHIN THE MIDDLE 1/3 OF THE DISTRIBUTION DRY = DRY 1/3 OF THE HISTORICAL DISTRIBUTION

REGION	JAN 1996	AUG 1995-JAN 1996	FEB 1995-JAN 1996
PRECIPITATION:			
NORTHEAST	WET	82	26
EAST NORTH CENTRAL	WET	80	74
CENTRAL	MID	30	47
SOUTHEAST	MID	85	76
WEST NORTH CENTRAL	WET	75	96
SOUTH	DRY	16	41
SOUTHWEST	DRY	5	35
NORTHWEST	MID	75	91
WEST	MID	17	74
NATIONAL	MID	35	67
TEMPERATURE:			
NORTHEAST	34	27	42
EAST NORTH CENTRAL	28	19	35
CENTRAL	36	24	40
SOUTHEAST	29	17	35
WEST NORTH CENTRAL	21	40	47
SOUTH	42	49	46
SOUTHWEST	80	99	95
NORTHWEST	63	83	90
WEST	90	99	95
NATIONAL	34	64	65

TABLE 2.
STATISTICS FOR SELECTED RIVER BASINS:
AREAL PERCENT OF THE BASIN EXPERIENCING SEVERE OR EXTREME LONG-TERM (PALMER) DROUGHT, AND AREAL PERCENT OF THE BASIN EXPERIENCING SEVERE OR EXTREME LONG-TERM (PALMER) WET CONDITIONS, AS OF JANUARY 1996.
RIVER BASIN REGIONS AS DEFINED BY THE U.S. WATER RESOURCES COUNCIL.

RIVER BASIN	% AREA DRY	% AREA WET
MISSOURI BASIN	.0%	34.6%
PACIFIC NORTHWEST BASIN	.0%	50.5%
CALIFORNIA RIVER BASIN	6.7%	.0%
GREAT BASIN	12.5%	18.2%
UPPER COLORADO BASIN	.0%	.0%
LOWER COLORADO BASIN	22.0%	.0%
RIO GRANDE BASIN	18.3%	.0%
ARKANSAS-WHITE-RED BASIN	.0%	5.8%
TEXAS GULF COAST BASIN	.0%	.0%
SOURIS-RED-RAINY BASIN	.0%	81.7%
UPPER MISSISSIPPI BASIN	.0%	24.4%
LOWER MISSISSIPPI BASIN	.0%	.0%
GREAT LAKES BASIN	.0%	6.7%
OHIO RIVER BASIN	.0%	.0%
TENNESSEE RIVER BASIN	.0%	.0%
NEW ENGLAND BASIN	.0%	13.1%
MID-ATLANTIC BASIN	.0%	12.6%
SOUTH ATLANTIC-GULF BASIN	.0%	33.3%

TABLE 3. EXTREMES, 1961-90 NORMALS, AND 1996 VALUES FOR JANUARY. IT SHOULD BE NOTED THAT 1996 VALUES WILL CHANGE DUE TO THE USE OF A DENSER STATION NETWORK.

PRECIPITATION (INCHES)

REGION	DRIEST VALUE	DRIEST YEAR	WETTEST VALUE	WETTEST YEAR	NORMAL PCPN	1996 PCPN
NORTHEAST	.87	1981	7.22	1979	2.84	4.30
EAST NORTH CENTRAL	.32	1961	2.47	1916	1.11	1.75
CENTRAL	.72	1981	9.61	1937	2.52	3.19
SOUTHEAST	.92	1927	7.73	1936	4.13	4.28
WEST NORTH CENTRAL	.16	1961	1.25	1949	.61	.77
SOUTH	.53	1914	5.34	1932	2.09	1.21
SOUTHWEST	.20	1924	3.00	1916	.82	.36
NORTHWEST	.43	1985	7.81	1953	3.80	4.08
WEST	.28	1984	10.67	1916	2.58	2.56
NATIONAL	.92	1981	3.87	1916	2.07	2.11*

* PRELIMINARY VALUE, CONFIDENCE INTERVAL + OR - 0.34 INCHES

TEMPERATURE (DEGREES F)

REGION	COLDEST VALUE	COLDEST YEAR	WARMEST VALUE	WARMEST YEAR	NORMAL TEMP	1996 TEMP
NORTHEAST	12.3	1918	33.8	1932	21.1	21.0
EAST NORTH CENTRAL	-1.3	1912	25.4	1990	13.0	10.3
CENTRAL	15.1	1977	40.0	1933	28.2	28.8
SOUTHEAST	35.0	1977	57.7	1950	44.1	43.8
WEST NORTH CENTRAL	.1	1937	26.6	1986	16.5	11.5
SOUTH	31.1	1940	50.7	1923	40.7	41.4
SOUTHWEST	20.8	1937	38.2	1986	31.2	34.0
NORTHWEST	13.4	1949	37.4	1953	28.5	29.7
WEST	24.4	1937	45.5	1986	38.4	41.3
NATIONAL	22.4	1979	37.1	1953	29.9	29.8*

* PRELIMINARY VALUE, CONFIDENCE INTERVAL + OR - 0.3 DEG. F.

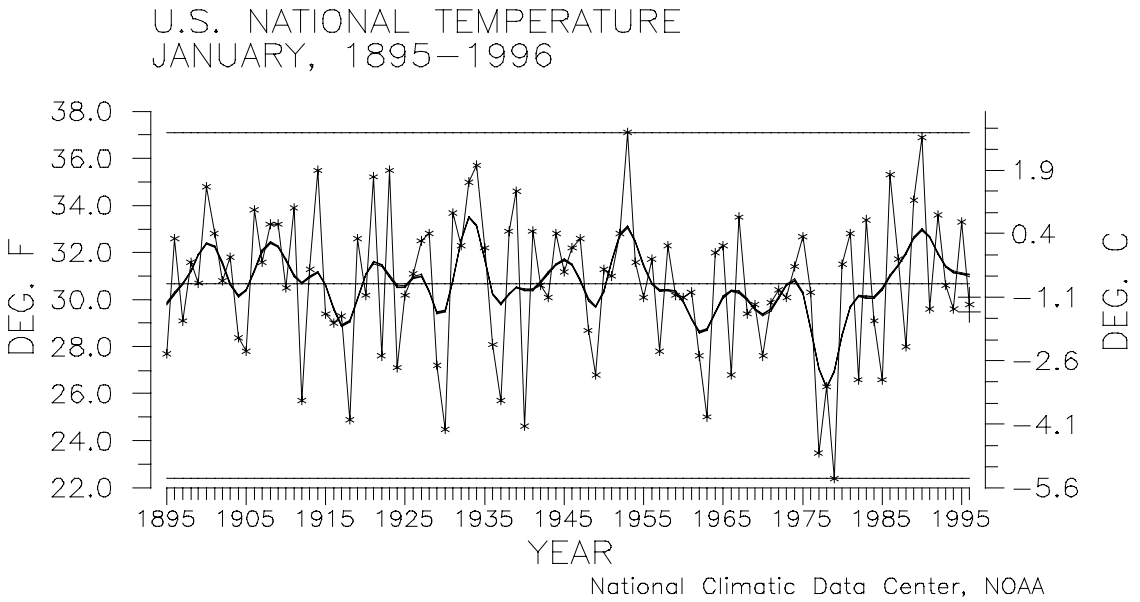

Figure 1

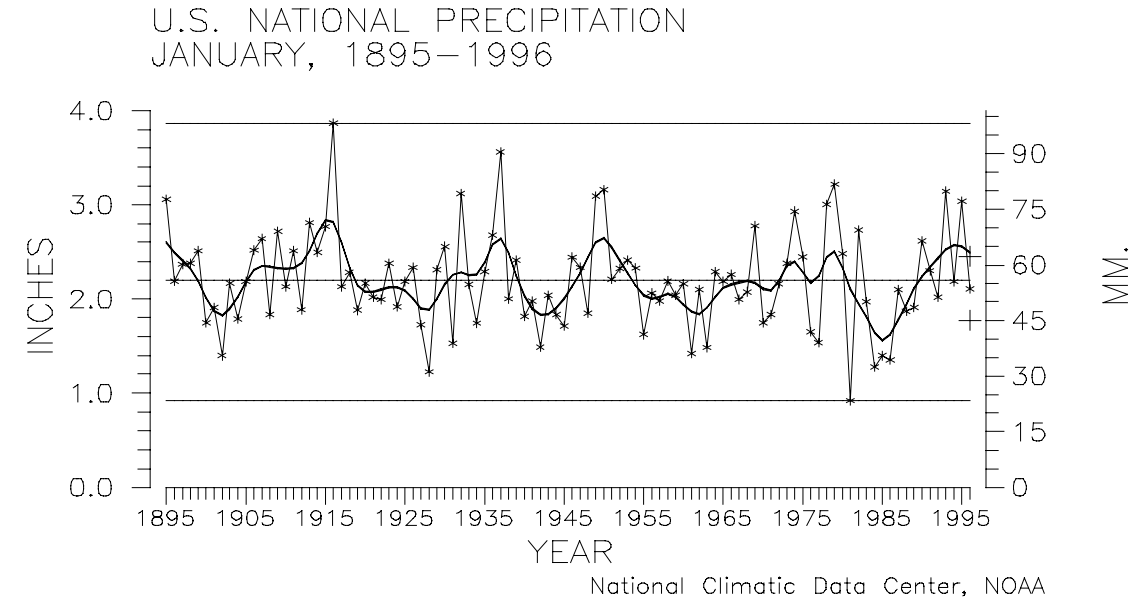

Figure 2

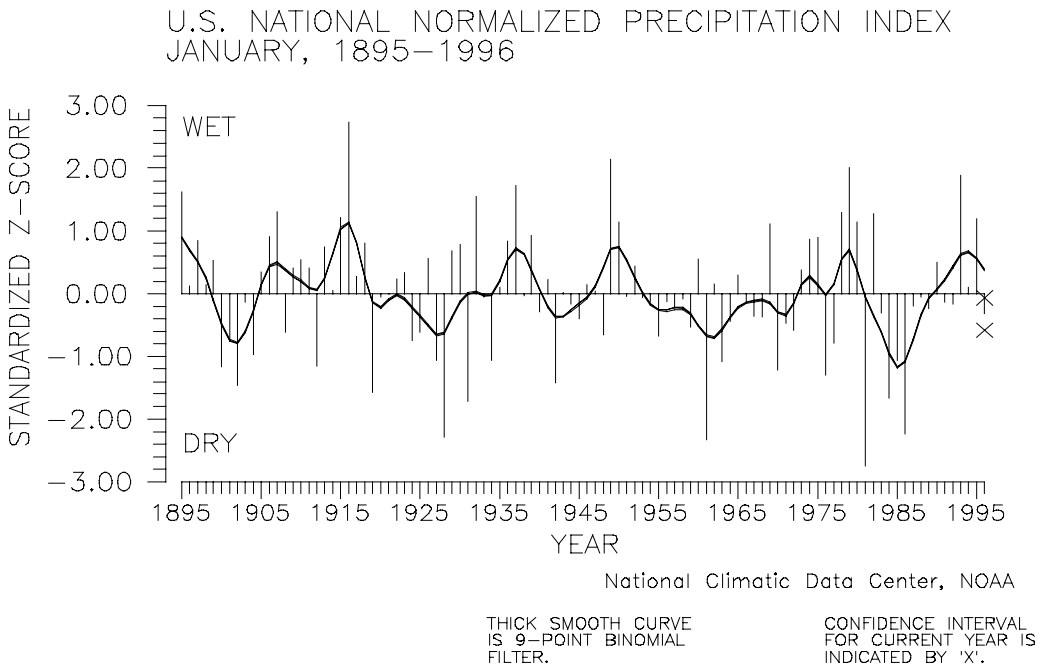

Figure 3

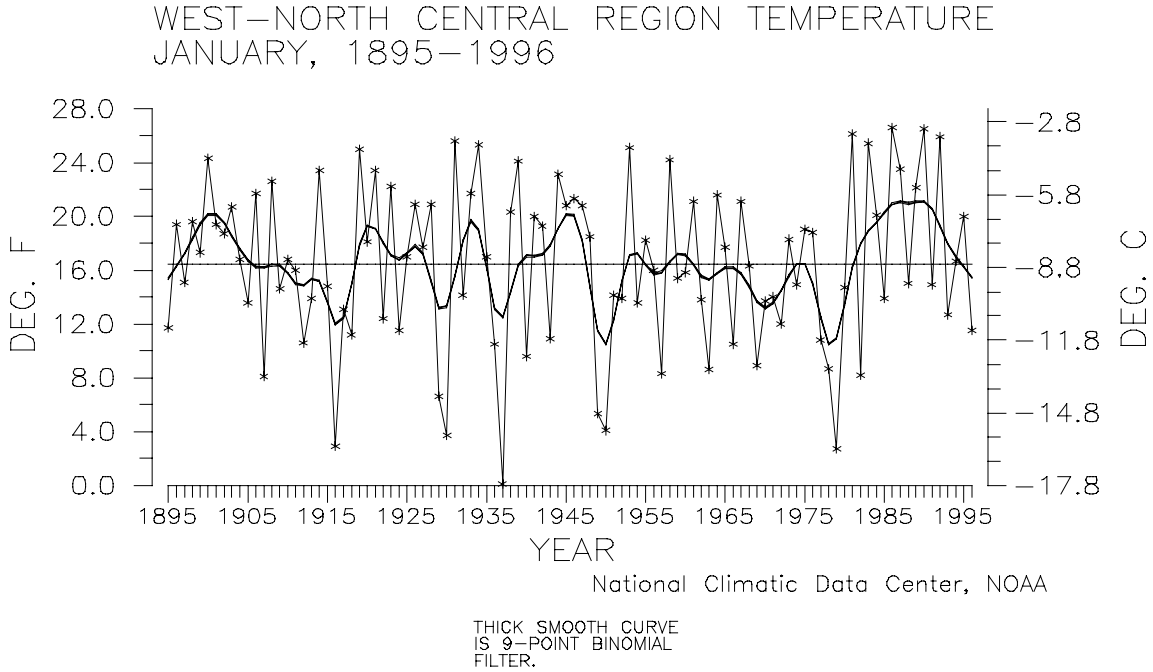

Figure 4

JANUARY 1996 STATEWIDE RANKS

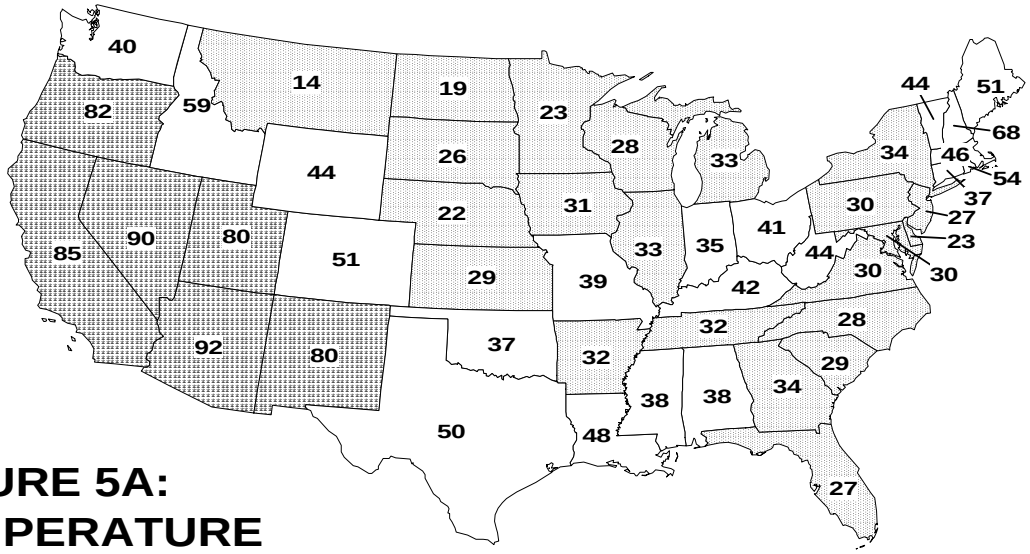

FIGURE 5A: TEMPERATURE

1 = Coldest
102 = Warmest

Temperature Ranks for the contiguous United States. Each state is ranked based on its data from 1895-1996. States having a rank in the warm third or cool third of their historical distribution are shaded.

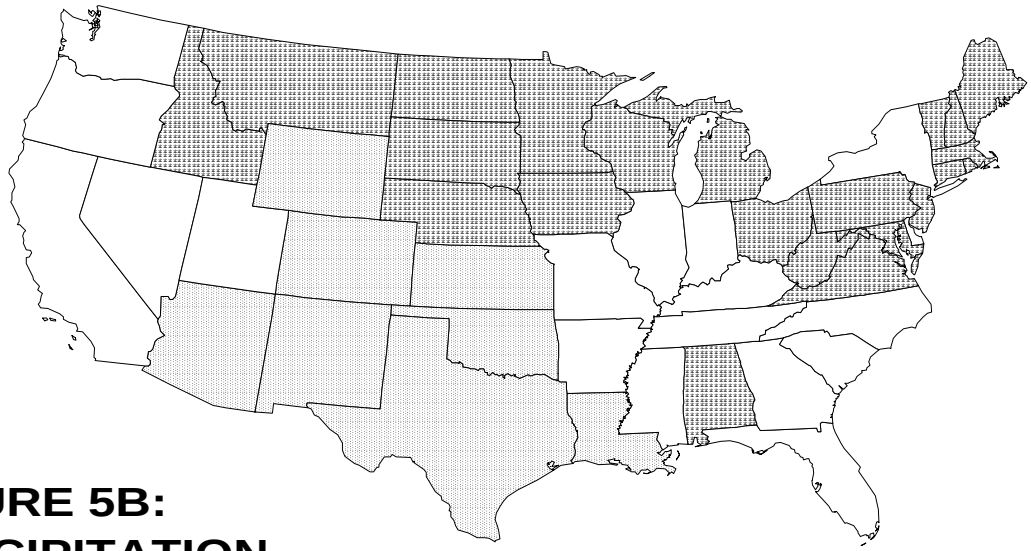

FIGURE 5B: PRECIPITATION

National Climatic Data Center, NOAA

Wet Third
Middle Third
Dry Third

Precipitation Rank Categories for the contiguous United States. Each state is ranked based on its data from 1895-1996. States having a rank in the wet third or dry third of their historical distribution are shaded.

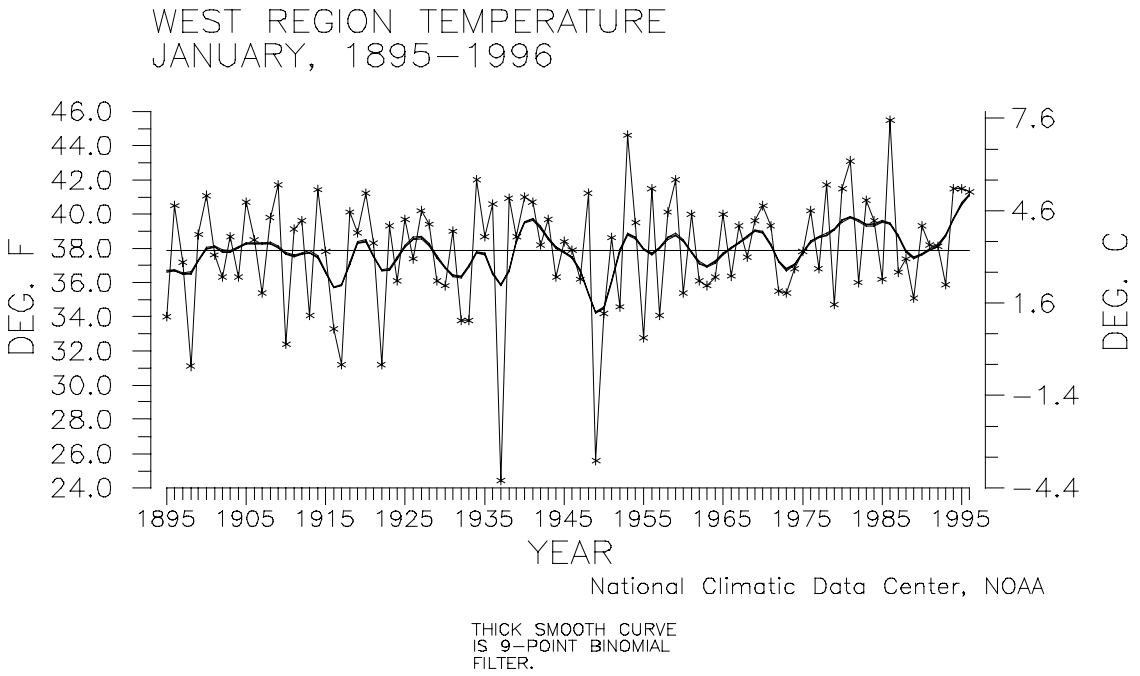

Figure 6

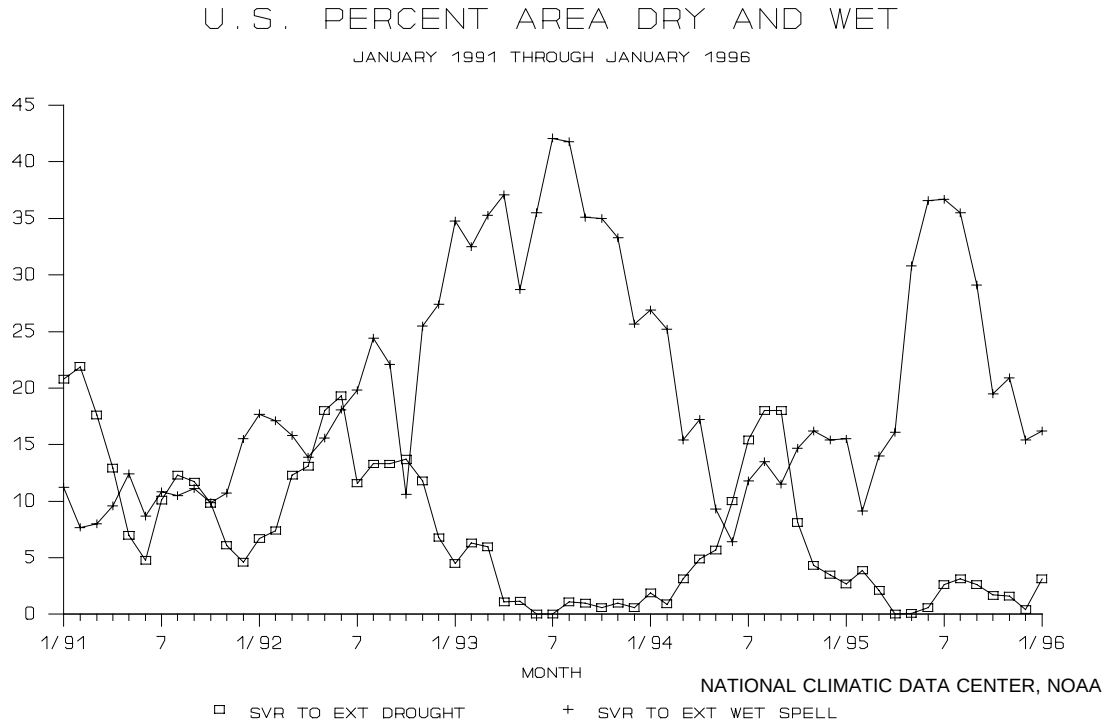

Figure 7

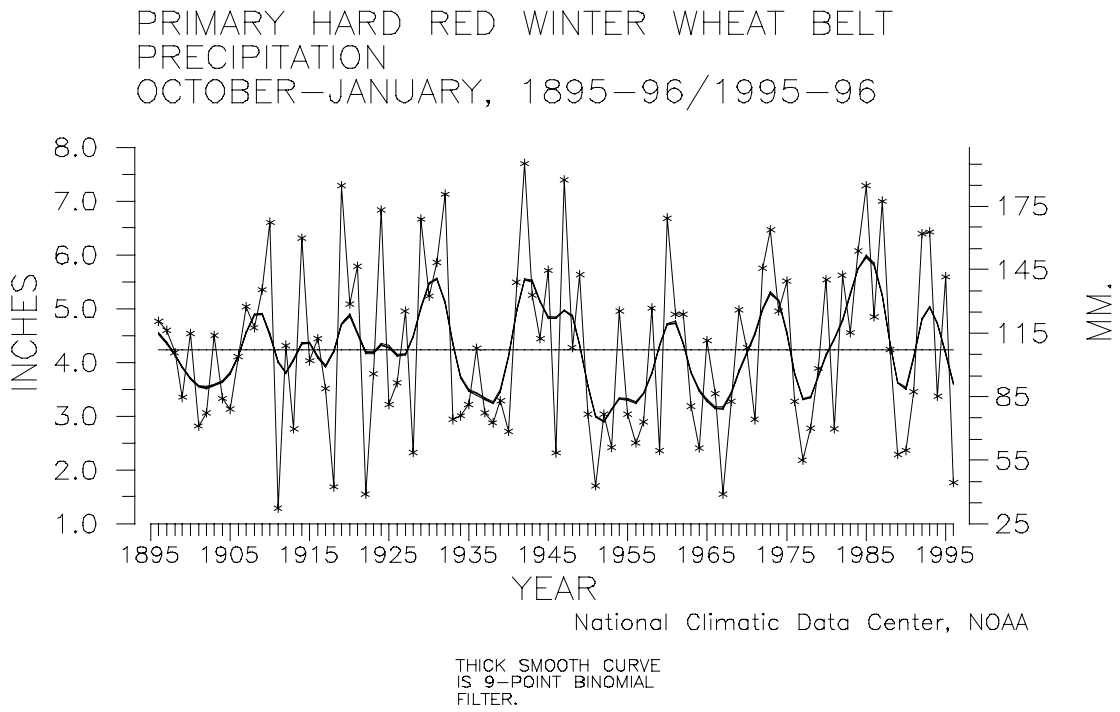
PRIMARY HARD RED WINTER WHEAT BELT
PRECIPITATION
OCTOBER–JANUARY, 1895–96/1995–96
INCHES
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
MM.
175
145
115
85
55
25
1895 1905 1915 1925 1935 1945 1955 1965 1975 1985 1995
YEAR
National Climatic Data Center, NOAA
THICK SMOOTH CURVE
IS 9–POINT BINOMIAL
FILTER.

Figure 8